

# Safety

## Functional Safety for Machinery Technician Certification (TÜV Rheinland) Course Description

### COURSE AGENDA

#### Day 1

- Understanding the Functional Safety for Machinery Technician Certification (TÜV Rheinland)
- Defining Legal Guidelines and Standards
- Defining Risk Analysis and Processes (ISO 12100:2010)
- Defining Basic Electrical Safety Principles (IEC 60204-1)
- Defining Basic Safety Principles
- Defining Machine Guarding Principles

#### Day 2

- Identifying Safety Functions
- Identifying Safety Devices
- Identifying Circuits, Schematics, and Examples
- Defining New Standards Regarding Safety of Machinery
- Evaluating Machine Safety Using a Practical Example
- Exam (1 hour)



### COURSE NUMBER: SAF-TUV0T

Rockwell Automation offers this training in cooperation with TÜV Rheinland.

#### Course Purpose

The standards regarding functional safety and relevant laws and directives demand that people and organizations performing responsible (accountable) tasks during relevant life cycle phases of a machine must achieve and prove required competencies.

In this training, students will learn how the current standards dictate the selection, assembly, installation, validation, and maintenance of safety devices and components to reduce hazards from machinery and ensure the safety of people and the environment. Practical examples will demonstrate possibilities regarding machine protection.

This training will also cover safety topics, such as: redundancy, testing, distance calculations, assigning required level of risk reduction as PL, monitoring moveable guard positions, and fault avoidance for relevant life cycle phases.

After completing this course, students should understand and be able to use ISO 12100, IEC 60204-1 and other relevant machine functional safety standards.

Students who want Functional Safety for Machinery Technician Certification (TÜV Rheinland) **must** meet all eligibility requirements and pass the exam scheduled at the end of the second day.

### ***Who Should Attend***

Machine technicians, application engineers, safety specialists and those responsible for repairing and maintaining machine safety should attend this course.

### ***Prerequisites***

- **Required:**
  - **Minimum of 1 year experience working on industrial machinery**
  - A completed and approved eligibility form to receive certification (see details in the next section)
- **Recommended:** Basic working knowledge of electrical and electronic control functions for machinery
- **Recommended:** Awareness of basic safety principles

### ***Certificate Eligibility Requirements***

Requirements to receive the **Functional Safety for Machinery Technician Certificate (TÜV Rheinland):**

- **Before taking the course, an eligibility form from TÜV Rheinland must be completed and approved, proving:**
  - Minimum of 1 year experience working on industrial machinery
  - Documented education, high school diploma or global equivalent

*or*

  - Experience in machinery maintenance and operation verified by employer
- Attended complete two-day course
- Passing grade of 70% or higher on the exam

If all eligibility requirements are fulfilled, exam participants will receive individual notification of results and the Functional Safety for Machinery Technician certificate from TÜV Rheinland.

### ***Exam***

The Student Manual may be used during the exam.

**[www.rockwellautomation.com](http://www.rockwellautomation.com)**

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#### **Power, Control and Information Solutions Headquarters**

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444  
Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640  
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

### ***Technology Requirements***

Rockwell Automation provides all technology students require in the classroom.

### ***Student Materials***

To enhance and facilitate students' learning experience, the following material is provided to each student as part of the course package:

- *Student Manual*, covering course material and key concepts

### ***Next Learning Level***

If you want to learn more about functional safety standards for machinery, you can take:

- *Functional Safety for Machinery Introduction* (Course No. SAF-TUV1)

If you want to learn about more about some of the safety devices discussed in this course, you can take:

- *Safety Relays and Devices Maintenance and Troubleshooting* (Course No. SAF-COM101)

### ***Course Length***

This is a two-day course.

### ***Course Number***

The course number is SAF-TUV0T

### ***To Register***

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at <http://www.rockwellautomation.com/training>

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